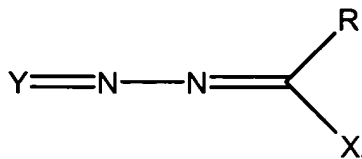


CLAIMS

What is claimed is:

1. An organophotoreceptor comprising an electrically conductive substrate and a photoconductive element on the electrically conductive substrate, the photoconductive element comprising:

a) a charge transport material having the following formula:



where R comprises a hydrogen, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group; X comprises an arylamine group; and Y comprises a 9-fluorenylidene group having at least a solubilizing substituent, wherein the solubilizing substituent comprises a $-(\text{CH}_2)_n\text{H}$ group where n is an integer between 1 and 50, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, Si, P, C=O, O=S=O, a heterocyclic group, an aromatic group, an NR_a group, a CR_b group, a CR_cR_d group, or a SiR_eR_f where R_a , R_b , R_c , R_d , R_e , and R_f are, each independently, a bond, H, a hydroxyl group, a thiol group, a carboxyl group, an amino group, an alkyl group, an alkoxy group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group; and

(b) a charge generating compound.

2. An organophotoreceptor according to claim 1 wherein X comprises a p-(N,N-disubstituted)arylamine group, a carbazole group, or a julolidine group.

3. An organophotoreceptor according to claim 1 wherein the solubilizing substituent comprises a $-\text{C}(=\text{O})\text{O}-\text{R}_5$ group where R_5 is an alkyl group, an alkenyl group, or an aromatic group.

4. An organophotoreceptor according to claim 1 wherein the 9-fluorenylidene group further comprises at least a substituent selected from the group consisting of a halogen, a NO₂ group, a cyano group, a hydroxyl group, a thiol group, a carboxyl group, an amine group, an ester group, an alkyl group, an alkoxy group, an alkenyl group, and an aromatic group.

5. An organophotoreceptor according to claim 1 wherein the photoconductive element further comprises a second charge transport material.

6. An organophotoreceptor according to claim 5 wherein the second charge transport material comprises an electron transport compound.

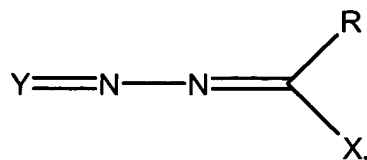
7. An organophotoreceptor according to claim 1 wherein the organophotoreceptor is in the form of a drum or a belt.

8. An electrophotographic imaging apparatus comprising:

(a) a light imaging component; and

(b) an organophotoreceptor oriented to receive light from the light imaging component, the organophotoreceptor comprising an electrically conductive substrate and a photoconductive element on the electrically conductive substrate, the photoconductive element comprising:

(i) a charge transport material having the formula



where R comprises a hydrogen, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group; X comprises an arylamine group; and Y comprises a 9-fluorenylidene group having at least a solubilizing substituent, wherein the solubilizing substituent comprises a -(CH₂)_nH group where n is an integer between 1 and 50, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, Si, P, C=O, O=S=O, a heterocyclic group, an aromatic

group, an NR_a group, a CR_b group, a CR_cR_d group, or a SiR_eR_f where R_a , R_b , R_c , R_d , R_e , and R_f are, each independently, a bond, H, a hydroxyl group, a thiol group, a carboxyl group, an amino group, an alkyl group, an alkoxy group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group; and
(ii) a charge generating compound.

9. An electrophotographic imaging apparatus according to claim 8 wherein X comprises a p-(N,N-disubstituted)arylamine group, a carbazole group, or a julolidine group.

10. An electrophotographic imaging apparatus according to claim 8 wherein the solubilizing substituent comprises a $-\text{C}(=\text{O})\text{O}-\text{R}_5$ group where R_5 is an alkyl group, an alkenyl group, or an aromatic group.

11. An electrophotographic imaging apparatus according to claim 8 wherein the 9-fluorenylidene group further comprises at least a substituent selected from the group consisting of a halogen, a NO_2 group, a cyano group, a hydroxyl group, a thiol group, a carboxyl group, an amine group, an ester group, an alkyl group, an alkoxy group, an alkenyl group, and an aromatic group.

12. An electrophotographic imaging apparatus according to claim 8 wherein the photoconductive element further comprises a second charge transport material.

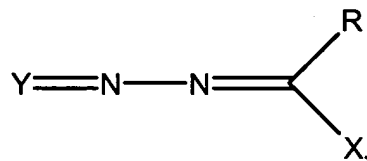
13. An electrophotographic imaging apparatus according to claim 12 wherein the second charge transport material comprises an electron transport compound.

14. An electrophotographic imaging apparatus according to claim 8 further comprising a toner dispenser.

15. An electrophotographic imaging process comprising:

(a) applying an electrical charge to a surface of an organophotoreceptor comprising an electrically conductive substrate and a photoconductive element on the electrically conductive substrate, the photoconductive element comprising

(i) a charge transport material having the following formula,



where R comprises a hydrogen, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group; X comprises an arylamine group; and Y comprises a 9-fluorenylidene group having at least a solubilizing substituent, wherein the solubilizing substituent comprises a $-(\text{CH}_2)_n\text{H}$ group where n is an integer between 1 and 50, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, Si, P, C=O, O=S=O, a heterocyclic group, an aromatic group, an NR_a group, a CR_b group, a CR_cR_d group, or a SiR_eR_f where R_a , R_b , R_c , R_d , R_e , and R_f are, each independently, a bond, H, a hydroxyl group, a thiol group, a carboxyl group, an amino group, an alkyl group, an alkoxy group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group; and

(ii) a charge transport compound;

(b) imagewise exposing said surface of said organophotoreceptor to radiation to dissipate charge in selected areas and thereby form a pattern of charged and uncharged areas on said surface;

(c) contacting said surface with a toner to create a toned image; and

(d) transferring said toned image to a substrate.

16. An electrophotographic imaging process according to claim 15 wherein X comprises a p-(N,N-disubstituted)arylamine group, a carbazole group, or a julolidine group.

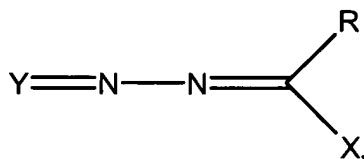
17. An electrophotographic imaging process according to claim 15 wherein the solubilizing substituent comprises a $-C(=O)O-R_5$ group where R_5 is an alkyl group, an alkenyl group, or an aromatic group.

18. An electrophotographic imaging process according to claim 15 wherein the 9-fluorenylidene group further comprises at least a substituent selected from the group consisting of a halogen, a NO_2 group, a cyano group, a hydroxyl group, a thiol group, a carboxyl group, an amine group, an ester group, an alkyl group, an alkoxy group, an alkenyl group, and an aromatic group.

19. An electrophotographic imaging process according to claim 15 wherein the photoconductive element further comprises a second charge transport material.

20. An electrophotographic imaging process according to claim 19 wherein the second charge transport material comprises an electron transport compound.

21. A charge transport material having the following formula,



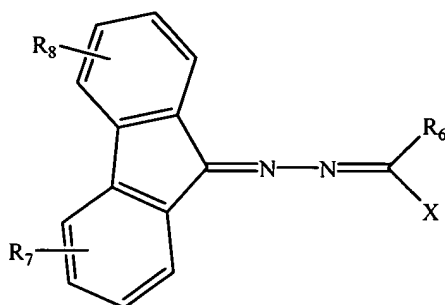
where R comprises a hydrogen, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group; X comprises an arylamine group; and Y comprises a 9-fluorenylidene group having at least a solubilizing substituent, wherein the solubilizing substituent comprises a $-(CH_2)_nH$ group where n is an integer between 1 and 50, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, Si, P, C=O, O=S=O, a heterocyclic group, an aromatic group, an NR_a group, a CR_b group, a CR_cR_d group, or a SiR_eR_f where R_a , R_b , R_c , R_d , R_e , and R_f are, each independently, a bond, H, a hydroxyl group, a thiol group, a carboxyl group, an amino group, an alkyl group, an alkoxy group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group.

22. A charge transport material according to claim 21 wherein X comprises a p-(N,N-disubstituted)arylamine group, a carbazole group, or a julolidine group.

23. A charge transport material according to claim 21 wherein the solubilizing substituent comprises a -C(=O)O-R₅ group where R₅ is an alkyl group, an alkenyl group, or an aromatic group.

24. A charge transport material according to claim 21 wherein the 9-fluorenylidene group further comprises at least a substituent selected from the group consisting of a halogen, a NO₂ group, a cyano group, a hydroxyl group, a thiol group, a carboxyl group, an amine group, an ester group, an alkyl group, an alkoxy group, an alkenyl group, and an aromatic group.

25. A charge transport material according to claim 21 wherein the charge transport material has formula:



where R₆ comprises a hydrogen, an alkyl group, an alkenyl group, a heterocyclic group, or an aromatic group; R₇ comprises a -(CH₂)_nH group where n is an integer between 1 and 50, and one or more of the methylene groups is optionally replaced by O, S, N, C, B, Si, P, C=O, O=S=O, a heterocyclic group, an aromatic group, an NR_a group, a CR_b group, a CR_cR_d group, or a SiR_eR_f where R_a, R_b, R_c, R_d, R_e, and R_f are, each independently, a bond, H, a hydroxyl group, a thiol group, a carboxyl group, an amino group, an alkyl group, an alkoxy group, an alkenyl group, a heterocyclic group, an aromatic group, or part of a ring group; R₈ comprises a hydrogen, a halogen, a NO₂ group, a cyano group, a hydroxyl group, a thiol group, a carboxyl group, an amine group,

13 an ester group, an alkyl group, an alkoxy group, an alkenyl group, or an aromatic group;
14 and X comprises an arylamine group.

1 26. A charge transport material according to claim 25 wherein R_8 is a
2 hydrogen and R_7 comprises a $-C(=O)O-R_{13}$ group where R_{13} is an alkyl group, an alkenyl
3 group, or an aromatic group.

1 27. A charge transport material according to claim 25 wherein X comprises a
2 p-(N,N-disubstituted)arylamine group, a carbazole group, or a julolidine group.

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